

AN EARLY DRAWING OF *CHLOSYNE GORGONE* (HÜBNER) (NYMPHALIDAE) BY JOHN ABBOT**Additional key words.** *Chlosyne nycteis*, John Francillon, *Melitaea ismeria*, *Satyrium liparops*

Calhoun (2003, 2004) provided evidence that the enigmatic taxon, *Melitaea ismeria* (Boisduval & Le Conte), is synonymous with *Chlosyne gorgone* (Hübner) rather than *Chlosyne nycteis* (Doubleday) as proposed by Gatrell (1998, 2003). The original description of *M. ismeria* was derived from a drawing of *C. gorgone* by John Abbot (1751-ca. 1840), an English artist-naturalist who lived for many years in Georgia. Abbot sold thousands of illustrations and often duplicated his compositions out of convenience. I subsequently located three other renderings of *C. gorgone* by Abbot and speculated that more may exist (Calhoun 2003). During a recent visit to The Natural History Museum, London, I discovered yet another drawing of the species that offers additional insight into the identity of *M. ismeria*.

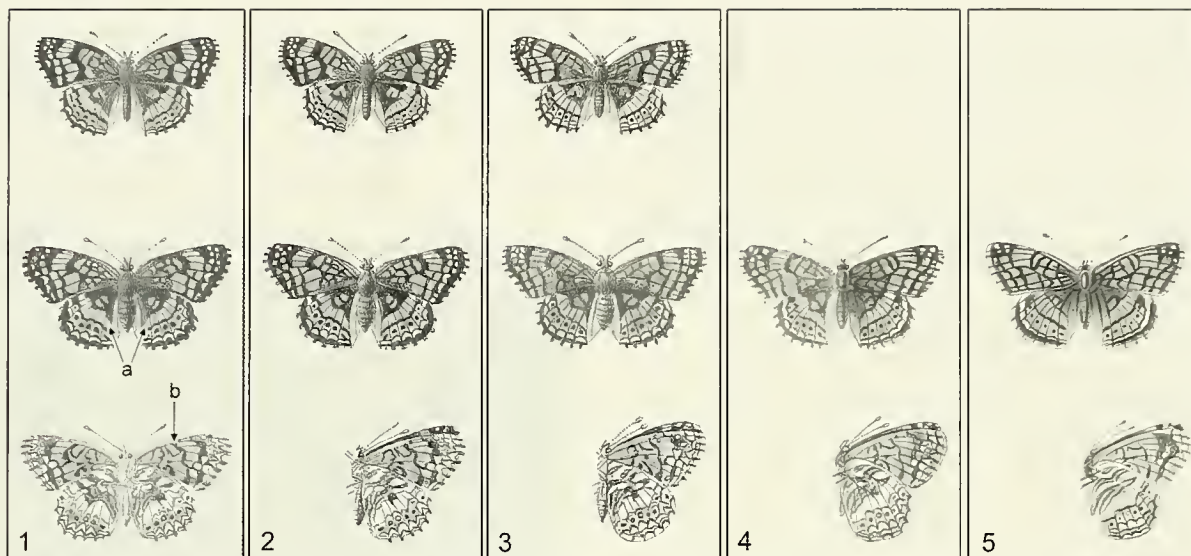
The Natural History Museum contains the largest number of John Abbot's insect watercolors in the world. Most were collected by John Francillon (1744-1816), a London jeweler who acted as Abbot's agent, selling his specimens and drawings to British and European naturalists. Francillon bound his 2,843 invertebrate drawings by Abbot into 17 red morocco volumes. Each drawing is accompanied by manuscript notes that typically include biological information, localities, and common names coined by Abbot. It has been assumed (e.g. Scudder 1872, Harris 1972, Calhoun 2003) that the notes associated with the Lepidoptera drawings were written by Abbot himself. A more thorough analysis confirmed that they were transcribed by Francillon from Abbot's originals. They are consistent with annotations composed by Abbot for his other sets of drawings, but the handwriting matches that of Francillon. Francillon added Latin names, plant identifications, and references to other drawings. He rearranged the drawings into approximate taxonomic order and developed a consistent format for the volumes. A more detailed treatise of the butterfly drawings is planned.

The additional drawing of *C. gorgone* is bound into Francillon's Volume 6 and is rendered in watercolor and graphite in a vertical format. It portrays a dorsal male, dorsal female, and ventral female (Fig. 1). The accompanying notes read, “+++N° 45. *Papilio*, _____. Taken in summer. See N° 7 in Quarto Drawings, Called in Georgia Crosswort Frittillaria.” Francillon left the Latin name incomplete awaiting identification. Drawing “N° 7” is bound into Volume 16 under the heading of “Tab. 7” and portrays *C. gorgone* with immatures and a hostplant (see Calhoun 2003, fig. 3). The common name is apparently Francillon's stylized

version of “Cross wort Frittillary” that Abbot repeatedly used for this species (see Calhoun 2003). Scudder (1872) recorded the drawing in Volume 16, but overlooked the analogous figures in Volume 6.

It is believed that Francillon obtained his invertebrate drawings from Abbot between 1792 and 1812 (Rogers-Price 1997). The engraved title pages for Volumes 6 and 16 are dated 1792 and 1804, respectively. However, this does not necessarily mean that the associated drawings were completed only during those years. The drawings themselves can be useful in determining their chronology. All the ventral butterfly figures in Volume 6 were drawn with fully outstretched wings (Fig. 1), which is consistent with Abbot's earlier works, including the original drawings for Smith & Abbot (1797) that were completed ca. 1783-1792. His later drawings of butterflies (ca. 1800 +) almost always portray ventral adults in more natural poses (Figs. 2-4). This evidence suggests that the drawing of *C. gorgone* in Volume 6 is Abbot's oldest known representation of the species. It was probably rendered at least twenty years prior to his figures for *M. ismeria* (Fig. 4). Abbot reproduced his duplicate figures of *C. gorgone* from the same template illustrations. This is revealed in various subtle characters, such as identical asymmetrical hindwing median bands on the dorsal females (Figs. 1-4). Abbot reproduced only the right half of the ventral adult for his later drawings; a unique wavy black line is present on the forewing of all these figures (Figs. 1-4). For the engraved plate of *M. ismeria* in Boisduval & Le Conte (1829-[1837]), the body of the original dorsal female was altered by another artist to depict a more slender insect. Furthermore, the engraver copied only the right side of this figure for both halves of the corresponding adult on the plate (Figs. 4, 5) (see also Calhoun 2003, 2004).

Abbot's drawings of *Satyrium liparops* (Le Conte) reflect a parallel history. The figures used for the original description of this species were derived from the same set of Abbot drawings as those for *M. ismeria* (Calhoun 2004). Earlier drawings of *S. liparops* are likewise bound into Francillon's Volumes 6 and 16 at The Natural History Museum, London. The adults and immatures in these three drawings are equivalent, but the later figures that were reproduced in Boisduval & Le Conte (1829-[1837]) are less meticulous, resulting in many years of debate about the true identity of the species (see Calhoun 2004, figs. 6, 7). The set of drawings containing the original figures of *S. liparops* and *M. ismeria* were completed by Abbot after he took a brief hiatus, during which he threatened to “quit



FIGS. 1-5. Figures of *C. gorgone* by John Abbot. Top-bottom: dorsal male, dorsal female, ventral female. **1**, From Francillon's Volume 6 (ca. 1792°). Arrows denote shared characters of all the duplicate figures: a, asymmetrical hindwing median bands. b, wavy line on the right ventral forewing. **2**, From Francillon's Volume 16 (ca. 1804°). **3**, For William Swainson (ca. 1816-1818), Alexander Turnbull Library, Wellington, New Zealand; E-272-f-017. **4**, For John E. Le Conte (ca. 1815, Thomas Library, University of South Carolina) (orig. drawing for *M. ismeria*). **5**, From Plate 46 of *M. ismeria* in Boisduval & Le Conte (1829-[1837]). (© The Natural History Museum, London).

Natural history & retire to the Country" (Rogers-Price 1983). These drawings are generally inferior to his other works and it is unfortunate that Boisduval & Le Conte (1829-[1837]) chose them to convey their concepts of several new species. Poorly executed engravings worsened their ambiguity (Fig. 5). Such historical evidence can be invaluable when attempting to determine the status of uncertain taxa.

The newly discovered figures by Abbot are finely delineated and portray *C. gorgone* with more accuracy than any of his subsequent duplicates (Figs. 1-4). In Calhoun (2004) I suggested that his later drawings represent a phenotype tentatively recognized as the multivoltine subspecies *C. g. carlota* (Reakirt). Abbot's more detailed early figures support this identification, as does his associated reference to collecting the species during "summer."

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JOHN V. CALHOUN, 977 Wicks Dr., Palm Harbor, FL 34684, Email: bretcal@gte.net. Research Associate Florida State Collection of Arthropods DPI, FDACS, Gainesville, Florida 32614, USA

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